

## *Algebra A (Post Test)*

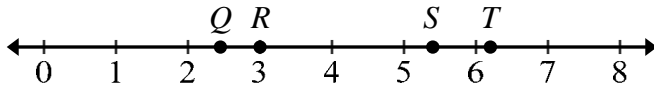
1. Between what two integers is  $\sqrt{15}$  ?

- A. 2 and 3
- B. 4 and 5
- C. 6 and 7
- D. 7 and 8

2. Which number is rational?

- A.  $\pi$
- B.  $\sqrt{\frac{1}{4}}$
- C. 5.2719835...
- D.  $\sqrt{8}$

3. Which point on the number line represents  $\sqrt{6}$  ?



- A.  $Q$
- B.  $R$
- C.  $S$
- D.  $T$

4. Which number is irrational?

- A.  $1.\overline{13}$
- B. 1.75
- C.  $\sqrt{9}$
- D.  $\sqrt{17}$

5. Which of the following shows the numbers in the correct order from *least* to *greatest*?

A.  $-\frac{3}{4}, -2\frac{1}{4}, -2, -3$

B.  $-\frac{3}{4}, -2, -2\frac{1}{4}, -3$

C.  $-3, -2\frac{1}{4}, -2, -\frac{3}{4}$

D.  $-3, -2, -2\frac{1}{4}, -\frac{3}{4}$

6. Simplify.

$$15 - \sqrt{81} \div 3$$

A. 2

B. 3

C. 12

D.  $15 - \sqrt{27}$

7. Simplify.

$$4\sqrt{8} - 2\sqrt{2}$$

A.  $16 - 2\sqrt{2}$

B.  $6\sqrt{2}$

C.  $2\sqrt{2}$

D.  $4\sqrt{8} - 2\sqrt{2}$

8. Simplify.

$$3\sqrt{6} + 2\sqrt{6}$$

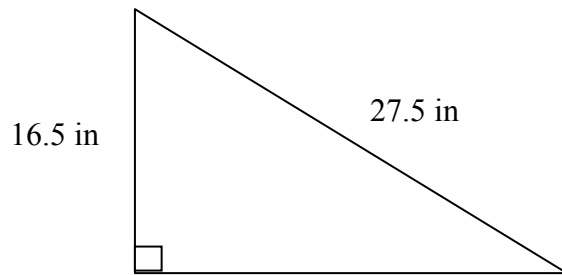
A.  $5\sqrt{6}$

B.  $5\sqrt{12}$

C. 15

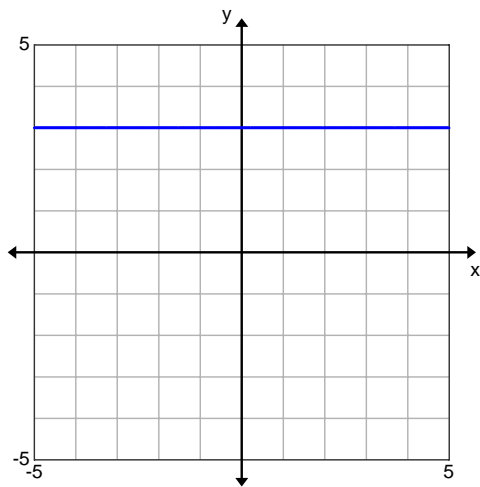
D.  $\sqrt{6}$

9. Find the missing side length of the right triangle below



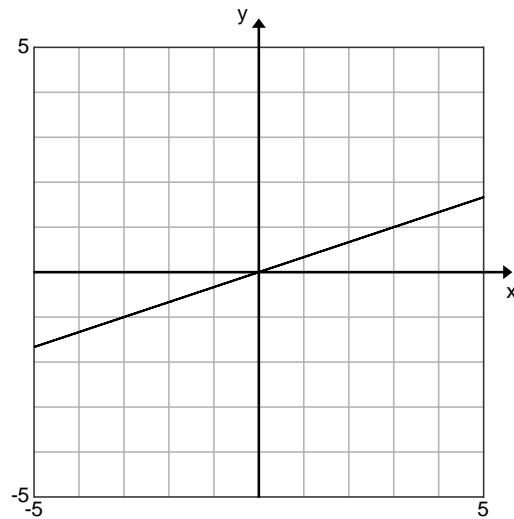
- A. 11 inches
  - B. 19 inches
  - C. 22 inches
  - D. 32 inches
10. It takes 2 pounds of apples to make 5 apple pies. How many pounds of apples are needed to make 8 pies?
- A. 20 pounds
  - B. 5.2 pounds
  - C. 4.2 pounds
  - D. 3.2 pounds
11. What is the slope of a vertical line?
- A. 1
  - B. undefined
  - C. 0
  - D. 100

12. What is the **slope** of the line?



- A. horizontal
- B. vertical
- C. 0
- D. undefined

13. What is a reasonable estimate of the slope of the line?



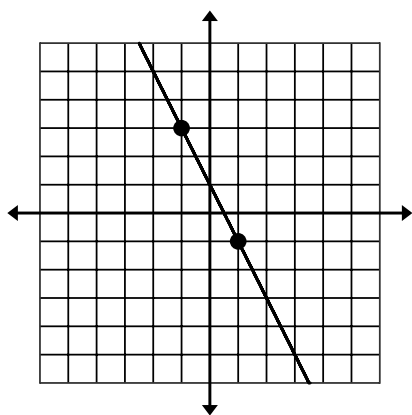
- A. 3
- B. -3
- C.  $-\frac{1}{3}$
- D.  $\frac{1}{3}$

14. Find the slope ( $m$ ) for the table above.

$x$	$y$
2	6
5	12
11	24

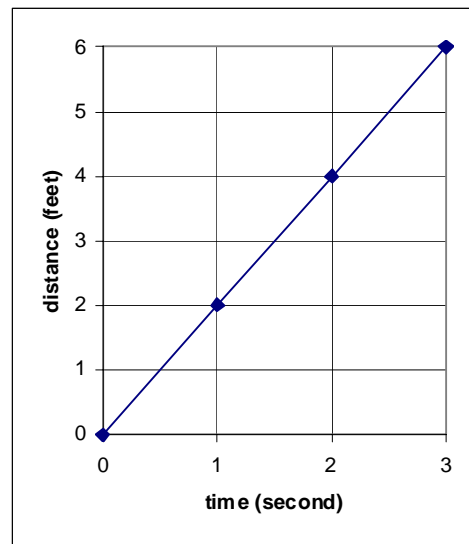
- A.  $m = 0$
- B.  $m = \frac{1}{2}$
- C.  $m = 2$
- D.  $m = 3$

15. Which of the following is the correct slope of the line?



- A.  $-2$
- B.  $2$
- C.  $-\frac{1}{2}$
- D.  $\frac{1}{2}$

16. What was Carly's speed?



- A. 5 ft/sec
- B. 4 ft/sec
- C. 3 ft/sec
- D. 2 ft/sec

17. Based on the pattern in the table, which of the following expressions could be used to determine the fare in dollars for a trip of  $m$  miles?

Time (minutes)	Height (meters)
0	300
2	240
4	180
6	120
8	60
10	0

- A.  $2m + 1.5$
- B.  $1.5m + 2$
- C.  $3m + 0.5$
- D.  $3.5m + 2$

18. Which table shows a linear pattern of growth?

A.

$x$	$y$
0	3
1	6
2	7
3	9

B.

$x$	$y$
0	3
1	4
2	5
3	7

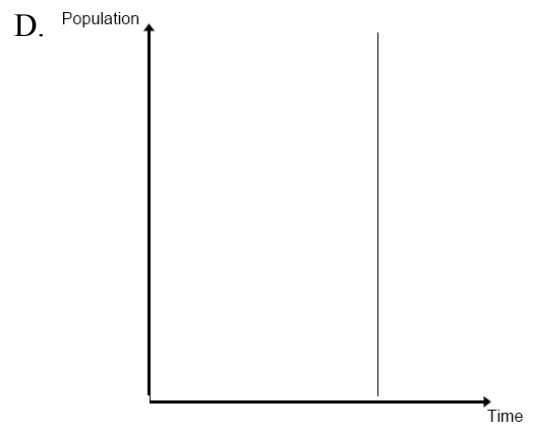
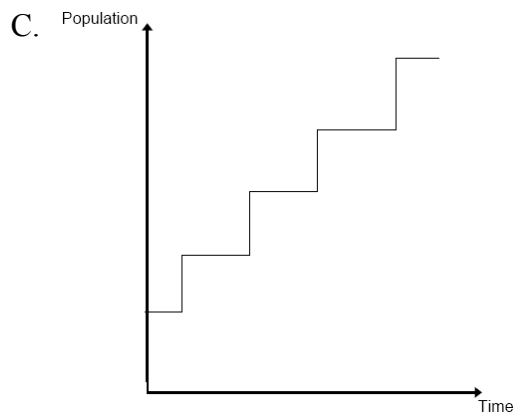
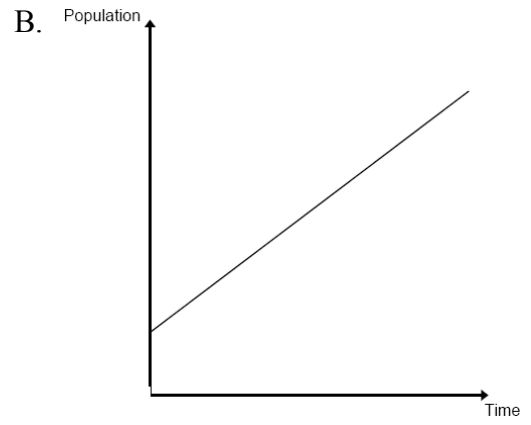
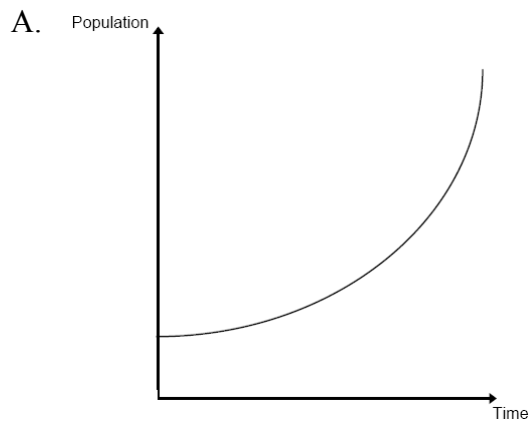
C.

$x$	$y$
0	3
1	4
2	6
3	9

D.

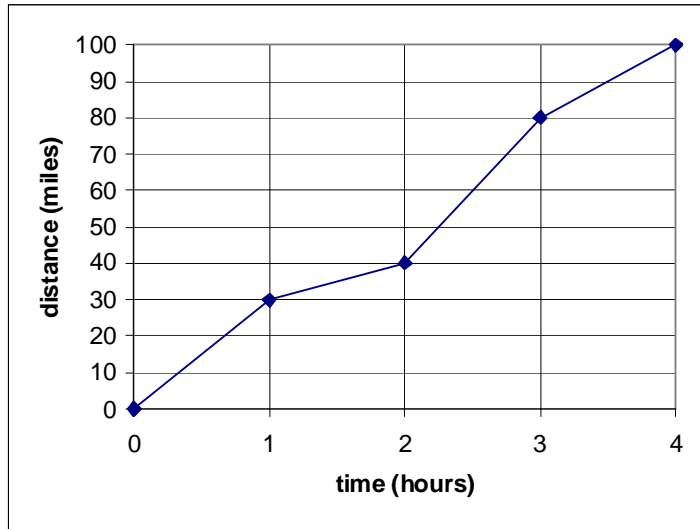
$x$	$y$
0	3
1	6
2	9
3	12

19. Which graph models a population increasing at constant rate?



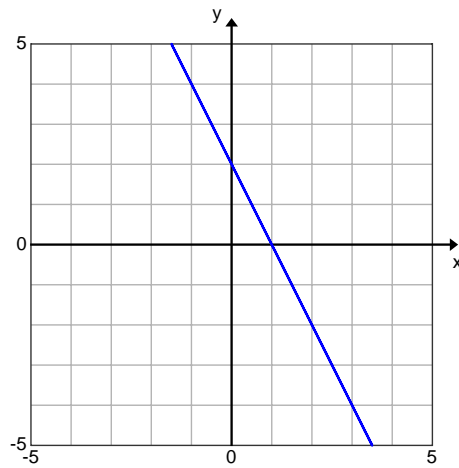
(Answer C)

20. During which interval of time did the car travel the fastest?



- A. 0 to 1 hours
- B. 1 to 2 hours
- C. 2 to 3 hours
- D. 3 to 4 hours

21. What is the y-intercept of the graph below?



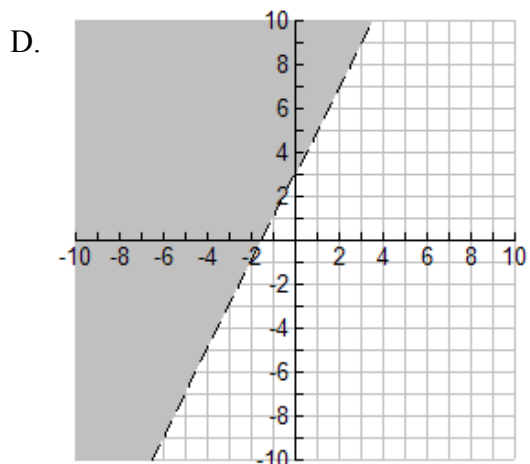
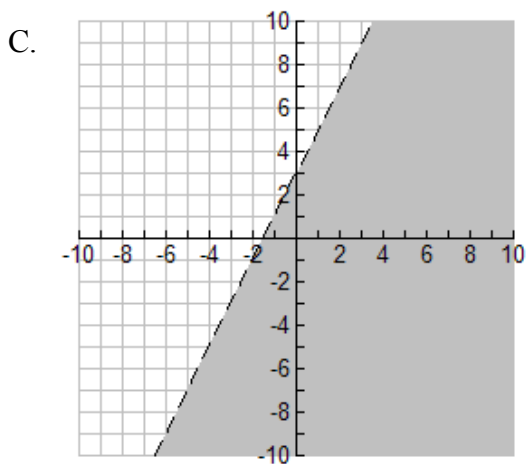
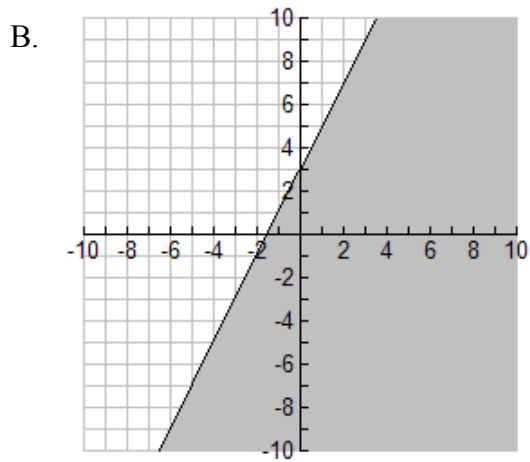
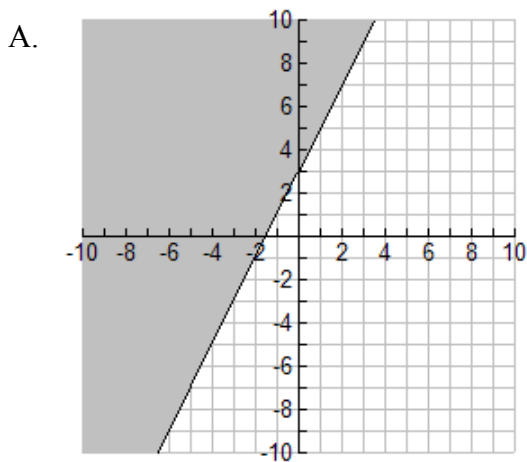
- A. (0, -2)
- B. (0, 2)
- C. (1, 0)
- D. (0, 1)

22. What is the x-intercept of the graph of the following data?

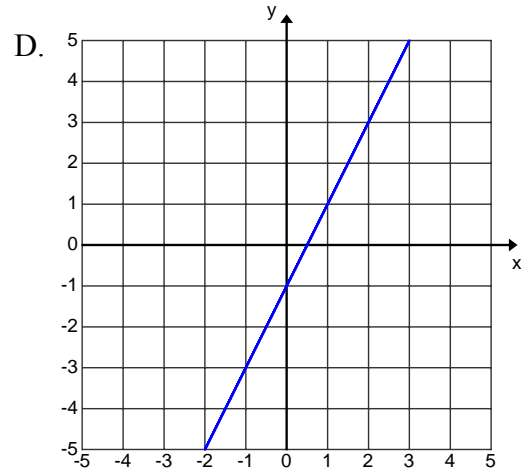
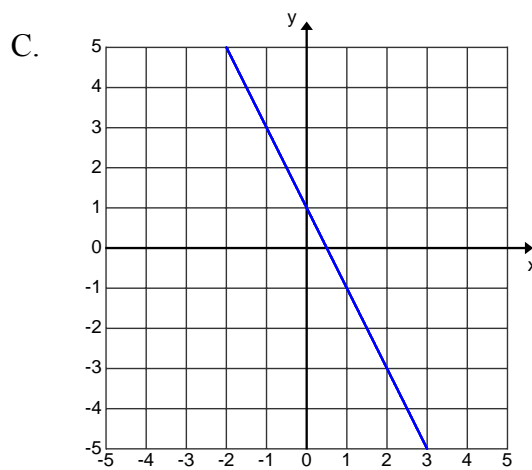
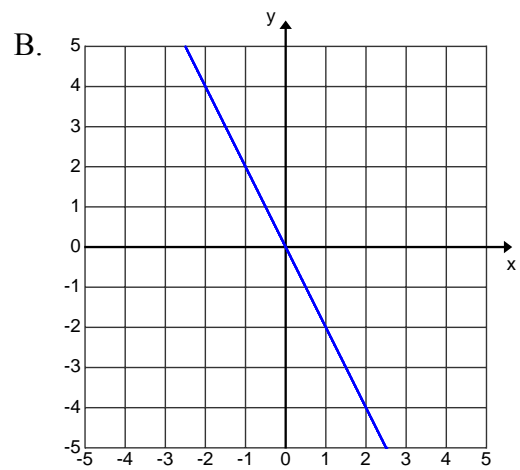
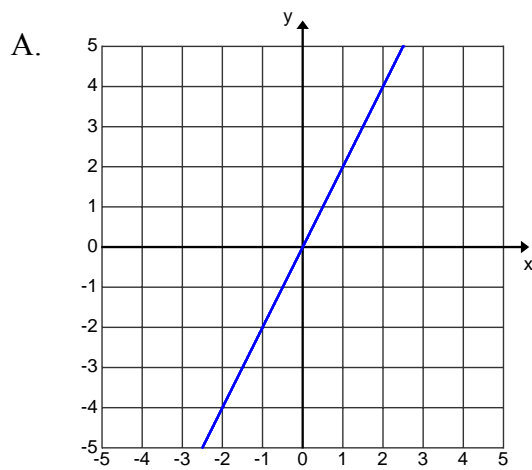
$x$	$y$
-1	0
0	3
1	6

- A. (-1, 0)
- B. (0, 3)
- C. (1, 6)
- D. (3, 0)

23. Which of the following is the correct graph of  $y \leq 2x + 3$ ?

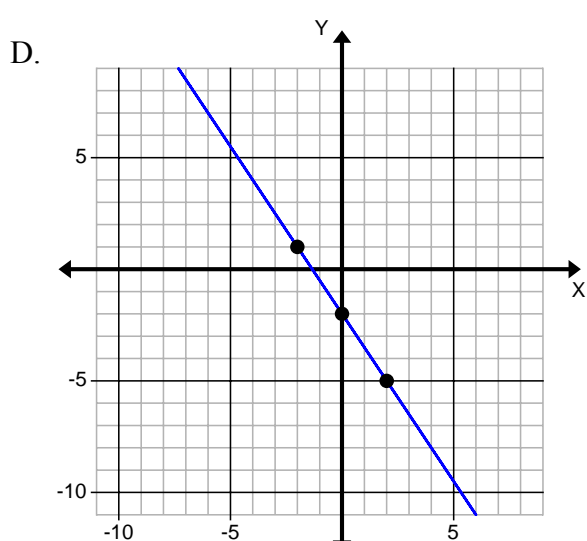
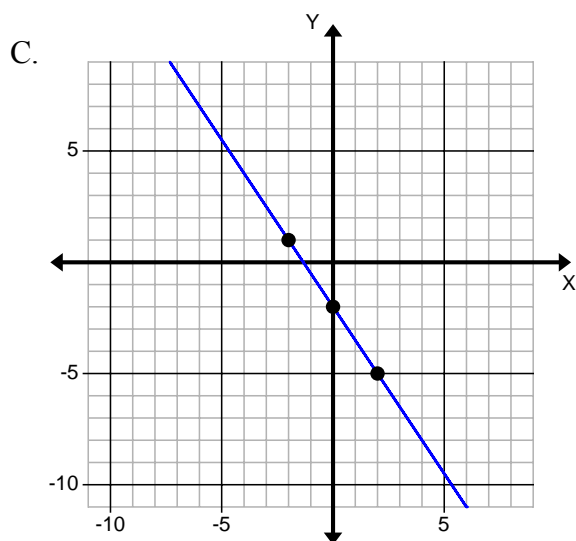
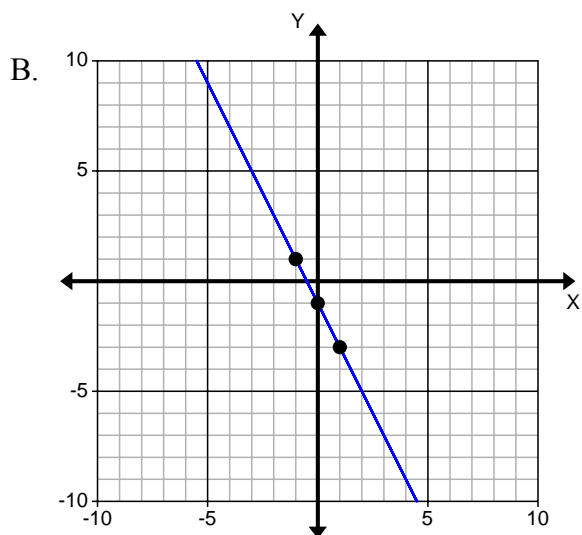
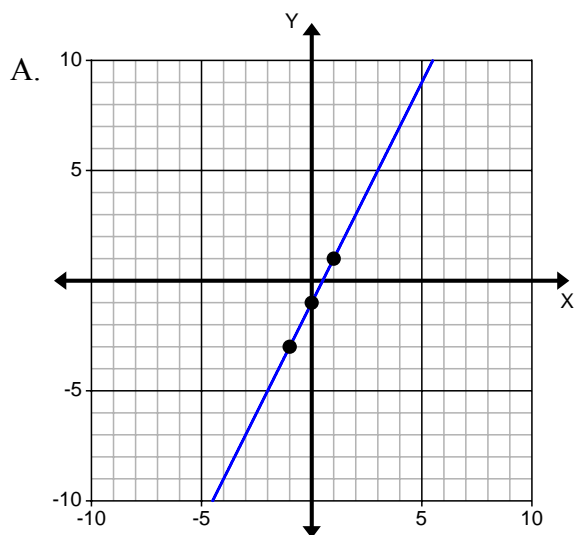


24. Which of the following shows the correct graph of  $y = 2x - 1$ ?



25. Which of the following graphs represent the table of values shown below?

$x$	$y$
-1	-3
0	-1
1	1



26. Which expression is equivalent to  $\frac{4x^2yz}{24xy^4z^2}$ ?

A.  $\frac{xyz}{6y^3z}$

B.  $\frac{1}{6xy^3z}$

C.  $\frac{1}{xy^3z}$

D.  $\frac{x}{6y^3z}$

27. Simplify  $3a^3 \cdot 5a^4$ .

A.  $8a^7$

B.  $8a^{12}$

C.  $15a^7$

D.  $15a^{12}$

28. Simplify  $(3k^4)^3$ .

A.  $27k^{12}$

B.  $27k^7$

C.  $9k^{12}$

D.  $9k^7$

29. Simplify  $\frac{a^3b^3}{a^5b^2}$ .

A.  $\frac{ab^6}{ab^7}$

B.  $a^8b$

C.  $\frac{b}{a^2}$

D.  $a^2b$

30. Which one of the following represents the product  $(-4xy^3z^2)(-7x^3y^3z)$ ?

- A.  $-28x^4y^6z^3$
- B.  $28x^4y^6z^3$
- C.  $28x^3y^9z^2$
- D.  $-28x^2y^2z^2$

31. Solve the inequality given below.

$$-2x - 4 < 22$$

- A.  $x < -13$
- B.  $x > -13$
- C.  $x < -9$
- D.  $x > -9$

32. Solve the following formula for  $t$ .

$$I = Prt$$

- A.  $t = I - Pr$
- B.  $t = I(P - r)$
- C.  $t = IPr$
- D.  $t = \frac{I}{Pr}$

33. Solve the following equation.

$$4(x + 2) = 2x - 10$$

- A. -9
- B. -6
- C. 6
- D. 9

34. Solve the following equation.

$$2(x + 4) - 5x = -16$$

- A.  $\frac{20}{3}$
- B.  $-\frac{20}{3}$
- C. 8
- D. -8

35. Solve for  $x$ :  $\frac{x-2}{12} = \frac{1}{2}$

- A. 6
- B. 8
- C. 12
- D. 144

36. Carrie is filling a rectangular swimming pool. The pool has a length of 20 ft., a width of 20 ft., and is 5 ft. deep. How much water will the pool hold?

- A.  $45 \text{ ft}^3$
- B.  $400 \text{ ft}^3$
- C.  $800 \text{ ft}^3$
- D.  $1,000 \text{ ft}^3$

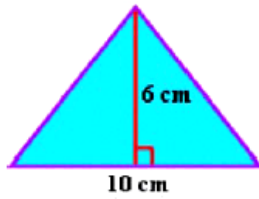
37. Which of the following is the algebraic expression that represents the **perimeter** of a triangle whose sides have lengths  $a$ ,  $b$ ,  $c$ ?

- A.  $abc$
- B.  $\frac{1}{2}(abc)$
- C.  $a + b + c$
- D.  $\frac{1}{2}(a + b + c)$

38. Jose is putting carpet in his bedroom. His room is rectangular with a length of 15 ft and a width of 12 ft. How much carpet will he need?

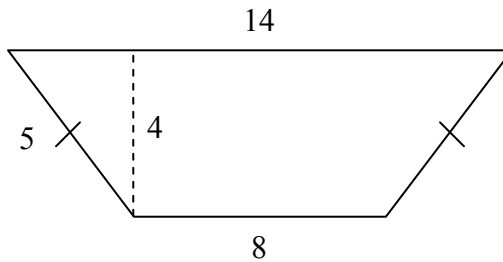
- A.  $27 \text{ ft}^2$
- B.  $54 \text{ ft}^2$
- C.  $108 \text{ ft}^2$
- D.  $225 \text{ ft}^2$

39. What is the area of the triangle?



- A.  $15 \text{ cm}^2$
- B.  $16 \text{ cm}^2$
- C.  $30 \text{ cm}^2$
- D.  $60 \text{ cm}^2$

40. What is the perimeter of the trapezoid above?

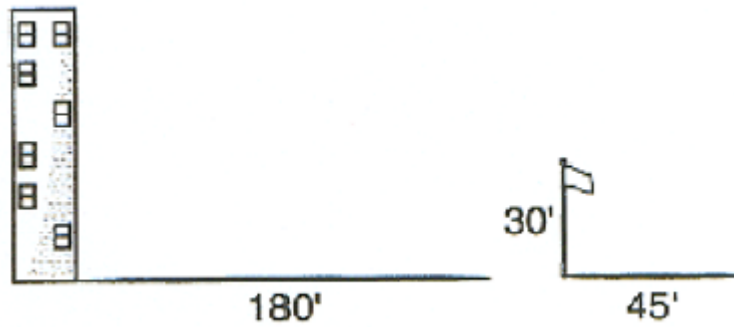


- A. 32 feet
- B. 44 feet
- C. 56 feet
- D. 72 feet

41. Lauren is having a 5 inch by 7 inch photo made into a similar poster. The poster is two feet wide. How long will it be?

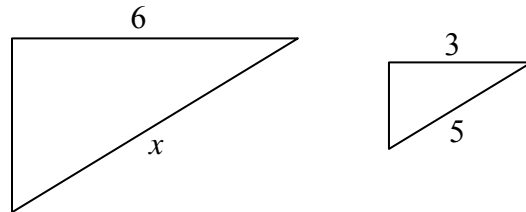
- A.  $\frac{14}{5}$  inches
- B.  $\frac{10}{7}$  inches
- C. 30 inches
- D. 33.6 inches

42. A flagpole is 30 feet tall and casts a shadow that is 45 feet long. At the same time, a building nearby casts a 180 foot shadow. How tall is the building?



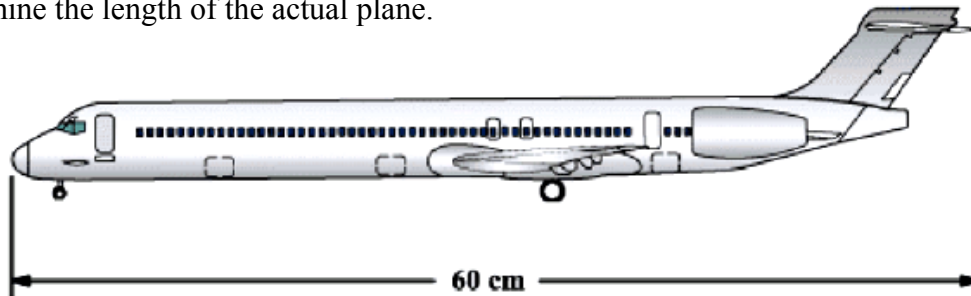
- A. 105 feet
- B. 120 feet
- C. 255 feet
- D. 270 feet

43. What is the value of  $x$  for the pairs of similar triangles above?



- A. 10
- B. 12
- C. 15
- D. 16

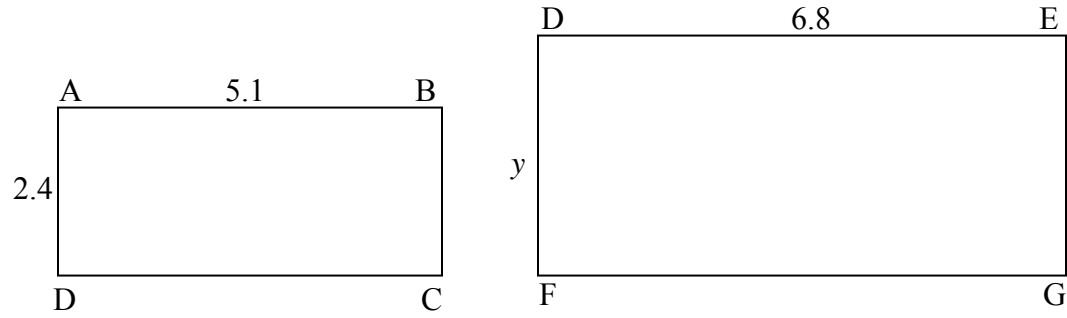
44. The length of the airplane in this scale drawing is 60 centimeters. Use the scale to determine the length of the actual plane.



**Scale: 1 centimeter = 2.35 feet**

- A. 30 feet
- B. 60 feet
- C. 120 feet
- D. 141 feet

45. Rectangle ABCD and Rectangle DEFG are similar. Find  $y$ :



- A. 3.2
- B. 3.4
- C. 3.6
- D. 3.8